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ABSTRACT

This proceedings report describes exercises used in a workshop on environmental scanning, designed to assist institutional research officers to develop competency in establishing and maintaining an external analysis capability on their campuses. The workshop offered an opportunity for participants to experience several techniques used in anticipatory strategic management, and was designed to enable participants to replicate the workshop on their campuses. Group exercises are outlined, including: (1) identification of critical trends; (2) identification of potential events that would affect the future of Texas higher education, the impact of the events, and actions for college and university leaders to take in anticipation of the events; (3) probability/impact analysis, which examines reasoning behind estimates of event probabilities; and (4) impact network analysis, which assesses first, second, and third order impacts of an event. Examples of the outcomes of these exercises are provided. Information resources that can inform campus planning are also discussed, including "Horizon List," an Internet resource where individuals can respond to draft articles on emerging trends and potential events; "Horizon Home Page," a futures planning database of abstracts; and "On the Horizon," a newsletter. (JDD)

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Critical Trends and Events Affecting the Future of Texas Higher Education

Proceedings of the 1995 TAIR Preconference Workshop on Environmental Scanning

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Critical Trends and Events Affecting the Future of Texas Higher Education: Proceedings of the 1995 TAIR Preconference Workshop on Environmental Scanning

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We are being bombarded by tumultuous forces for change as we go into the 21st Century: Virtual classrooms, global communications, global economies, telecourses, distance learning, corporate classrooms, increased competition among social agencies for scarce resources, pressure for institutional mergers, state-wide program review and so on. In order to plan effectively in this environment, college and university leaders must be able to anticipate new developments on their organizations and curricular programs.

Offices of institutional research have traditionally obtained and analyzed data for organizational planning, focusing on internal performance indicators/trends. How prepared are institutional research offices to handle the requirements of external analysis?

The objective of TAIR's 1995 preconference workshop on environmental scanning was to assist IR officers to develop competency in establishing and maintaining an external analysis capability on their campuses. Although the description of how to do this is available in earlier publications (Morrison, 1992; Morrison & Mecca, 1989; Morrison, Renfro, and Boucher, 1984), the workshop offered an opportunity for participants to experience using several techniques (e.g. critical trend and potential event identification and forecasting events and their impacts) used in anticipatory strategic management. Moreover, the intent was that this experience would enable participants to replicate the workshop on their campuses.

This is a report of the proceedings of the preconference workshop on environmental scanning. It is intended to summarize the outcomes of exercises, put these exercises in context, so that you may use them as a guide in conjunction with the references cited above when you implement a similar workshop on your campus.

Trends

Trends define the context within which organizations function. Therefore, it is important to identify critical trends, particularly those that are emerging, forecast their future direction, derive their implications for effective planning, and construct plans to take advantage of the opportunities they offer or ameliorate their consequences if they may negatively impact community college education. In trend identification, it is important to look widely in the social, technological, economic, environmental, and political sectors, locally, regionally, nationally, and internationally.

Therefore, the first exercise was to identify critical trends that defined the context within which Texas higher education functions. Participants were formed into three groups; each group had 25 minutes to identify critical trends, then 5 minutes to select the five most critical ones. The preliminary list included the following:

1. Technological demands
2. Limited resources
3. Changing population demographics
4. Increased demand for accountability
5. Maintaining quality
6. Pressure to merge institutions
7. Pressure for inter-institutional cooperation
8. Increased "school to work" demands
9. Electronic university
10. Distance education
11. Lifelong education
12. Multiple careers
13. Political conservatism

14. Greater competition for resources
15. Internationalization of education

This was a "first cut" at trend identification, and allowed me to make several points. First, it is important to break trends into basic elements in order to use them for data collection. For example, "changing population demographics" can be broken down into ethnic identification (Hispanic, black, Asian), gender, and median age, or some combination of the above. Such breakdowns facilitate data collection.

However, participants were encouraged not to initially focus on the specific wording of trends when conducting a trend identification exercise. Rather, the intent is to capture the thinking of senior leaders on campus; cleanup of the language can come later.

Events

Events are unambiguous and confirmable; when they occur, the future is different. Event identification and analysis is critical in anticipatory organizational planning. The event exercise focused on the following tasks:

1. Identifying potential events that, if they occurred, would affect the future of Texas higher education
2. Selecting the top five most critical events
3. Specifying the signals of each of the five most critical events
4. Forecasting the probability and the impact (both positive and negative) of one of these events
5. Recommending actions for college and university leaders in anticipation of these events

Event Analysis

Identification of Most Critical Events and Their Signals

The most critical events and their signals are specified below:

1. Distance education becomes the norm in Texas higher education:
   a. Gore's push for the information highway
   b. Texas institutions already share libraries
   c. NSF grant to the coordinating board
   d. 75% of Texas institutions have satellite downlinks
   e. Texas A&M/UT networks

2. Texas Higher Education Coordinating Board disbanded
   a. Reports in media
   b Proposed legislation
   c. Strength of SDICC/TECWE

3. Department of Education disbanded
   a. Proposed by Newt Gingrich
   b. 1994 election
   c. Probability of Republican president high in 1996

4. Regional accreditation abolished
   a. The Texas Higher Education Coordinating Board/SPRE student right to know
   b. No replacement for COPA
   c. Universities dropping out of SACS

5. Instantaneous feedback and assessment of higher education (vox populi)
   a. information superhighway
   b. electorate discussion groups
   c. growth in K-12 home/private schooling in
   d. vocalization by industry of displeasure with training
   e. push for i.e. structures

6. All Texas colleges and universities have access to Internet
   a. Expressed desire by the legislature
   b. THECB makes Perkins funds available.
   c. Increased awareness of the value/necessity of Internet access by faculty/staff

7. Funding for student loans reduced 50%
   a. Move by federal government to decentralize; cut student funding budgets

8. Student exchange program initiated between Texas and Mexico
   a. NAFTA
   b. Pressure for diversity
   c. Already available (10% resident tuition in Texas)

9. Vocational education responsibility moved to another agency
   a. Political. pressure in state government.

10. Reduction in funding by LBB
    a. Reallocation. of funding to other state agencies than higher ed.

11. All colleges becoming part of UT or Texas A&M system
    a. History
    b. Need to maximize resources
    c. Need to eliminate duplication of services

12. Pell grants eliminated
    a. President Clinton desires it
    b. SPRE in place
    c. Need for budget cuts to balance budget

13. Performance-based funding mandated
    a. Permanent measures in place in colleges and universities
    b. Standardized test scores down
    c. State IE committee
    d. Other groups

14. Public school systems go commercial

15. Fiber optics linkages available to everybody
    a. SW Bell discuss w/govern.

b. Tremendous growth of e-mail and use of the Internet
c. Funding from Feds and State government for telecommunications

A major point of this exercise is to focus attention of potential events that could affect the future of our organization. Therefore, the event statements need to be specific (i.e., "Pell grants eliminated," or "Pell grants reduced 50%") as opposed to "Reduction in student aid." "Fiber optic linkages available to everybody" is a bit unclear. Is "everybody" all faculty? Faculty, staff and students? All businesses? All homes?

One reason for being specific is that by making event statements concise, we can use them productively in estimating their probability and their impact. This was the focus of the probability/impact exercise, described below.

Probability/Impact Analysis

Each group selected one event. Group members first independently estimated the probability of the event occurring within the planning time frame (typically 3, 5, or 10 years) and, if it did occur, its degree of positive an its degree of negative impact on Texas higher education. The task was then as a group to get the reasoning out on the table for disparate forecasts. In essence, the group facilitator asked these questions: what is the reasoning behind a vote that the event is not likely to occur? What is the reasoning behind a vote that the event is highly likely? What is the reasoning behind the vote that the event, if it occurred, would be highly damaging to Texas higher education; what is the reasoning behind the vote that if the event occurred, it would strengthen Texas higher education?

What follows is the reasoning behind the probably and impacts of three events, followed by a recommendation to a hypothetical task force established by the governor on the future of Texas Higher Education.

1. Statewide Internet access by 75% of Texas colleges and universities within 5 yrs.

a. Arguments for high probability

1. Institutions are isolated
2. Strong sentiment to reallocate resources so that Texas will not be left behind

b. Arguments for low probability

1. Colleges and universities slow to move

Recommendations:

a. Increase state allocation of funds
b. Implement professional development activities

2 Complete elimination. of Pell grants

a. Arguments for high probability:

1. Quality getting more stringent
2. Pell grants have already been eliminated for prisoners
3. Talk of "underwriting" education w/in particularly needed areas
4. Replacement programs will be used (may be better ones)
5. Pell grants don't look at current finances

b. Arguments for low probability:

1. Political suicide to eliminate

c. Impact

1. May have different type students on campus
2. Benefit to taxpayers
3. Catastrophic in the short run; will need to provide financial support for economically disadvantaged students

d. Recommended actions

1. Attach lottery money to education
2. Tie commitments to grant/loans
3. Initiate cooperative ventures with businesses
4. Tie grants to perceived needs for state
5. Initiate state income tax
6. Initiate state education tax

3. 50% of college and university students in Texas are non-resident, utilizing distance education

[NOTE: distance education is electronic; students and teachers are not at the same location; interaction is real time]

a. Probability: 80-90%
   1. Distance education is cheap, efficient
   2. Increase numbers of non-traditional students
   2. Information revolution makes it possible
   3. Infrastructure exists (Internet, 50% of homes have PCs)
   4. Access/enrollment pressures on campus

b. Impact:
   1. Positive: revolutionary to moderate
      a. access to higher education nearly universal
      b. curriculum delivery, instruction models available
   2. Negative: catastrophic
      a. makes faculty jobs, print media obsolete
      b. loss of socializing effects of campus life

Recommendations

1. Increase funding for distance learning technology (hardware and faculty professional development activity in distance learning technologies
2. Preserve campus "metaphysics" (i.e., what it means to live among other students, scholars, etc.)
3. Implement quality assurance activities for distance learning

Impact Network Analysis

Another analysis technique is the impact network. In this analysis, assume that an event has occurred. What are the resulting first, second, third, etc. order impacts? The exercise focuses on first identifying first-order impacts (i.e., what would happen as a consequence of the event occurring?) After all first-order impacts are exhausted, take each first-order impact and ask the question, What would happen if this impact occurred? These are second-order impacts. When this analysis is exhausted, take each second-order

impact and ask the question, What would happen if this impact occurred? And so on.

Below are the results of an impact network analysis conducted, as all the exercises in the workshop, in a restricted time-frame.

1. The Texas Higher Education Coordinating Board disbanded

First order

1. Reporting effects shifted to other agencies
2. More local control over programs, delivery. systems

Second order:

1. Greater diversity
2. Duplication

Third order

1. Negative public reaction
2. Only system institutions.
3. More local responsibility for quality assessment/db management
4. Additional advisory boards
5. More consultants increased cost of obtaining expertise and advice
6. Oversight and distribution of statewide data bases

Recommendations

1. Consolidate Texas Education Agency and Texas Higher Education Coor
2. Assign other agencies responsibility. for collecting and providing access to statew
3. Don't disband the coordinating board
4. Reinvent the coordinating board

2. Performance-based funding for all institutions

First order impacts

1. IR offices is now more important
2. IR offices gain additional staff
3. More reporting required
4. Increased admission standards.
5. Decreased enrollment
6. Increased number of high performers, decreased low performers
7. Eliminate. open-door policies

Second-order impacts

1. Changes in enrollment
2. Changes in demographic profile of students
3. Change curriculum (to meet needs of better students more effectively)
4. Some institutions receive more funding
5. Decreased funding for others

Third-order impacts

1. Decrease in number of programs
2. Some institutions close
3. Decreased access to higher education
4. Some institutions reevaluate missions

Recommendations

1. Keep same funding formula, not performance based
2. Reward high performance with incentives
3. Design separate measures of performance funding with rewards for each measure
4. Increase overall educational funding
5. Assure educational (postsecondary) access to all Texans

2. 50% reduction in student loan funds

First-order impacts

1. Decreased accessibility to higher ed.
2. Loss of state funding
3. Decreased enrollment

Second-order impacts

1. Decreased faculty, staff
2. Decreased skilled labor for workforce
3. More opportunity for cooperation with industry
4. Decreased enrollment
5. Elimination of some programs

Third-order impacts

1. Development of alternative curriculums
2. Combination of programs
3. Decreased revenue
4. Identification of other sources for student financial aid
5. Reorganized academic programs
6. Recognized opportunity for new growth
7. Changed mission

Recommendations

1. Increase state level student loan funding
2. Provide loan money to businesses to underwrite internships

Discussion

Establishing a comprehensive environmental scanning system on a campus to inform planning requires a good deal of time from everyone involved in the process. Fortunately, we can take advantage of the information highway and can share resources via *Horizon List* and *Horizon Home Page*. *Horizon List* offers the opportunity to respond to draft articles focusing on emerging trends and potential events (for example, these proceedings will be inserted on the list for discussion when I get home). *Horizon Home Page* has a futures planning database of abstracts describing signals of change in the macroenvironment that can affect education; please review this section and please add to it. You may subscribe to *Horizon List* by sending the following message to listserve@unc.edu: subscribe horizon <yourfirstname> <yourlastname>. You may view and contribute to *Horizon Home Page* by turning your browser to the following URL address: http://sunsite.unc.edu/horizon.

To stimulate and focus discussion of the implications of emerging tends and potential events on your campus, recommend to the chair of your planning committee that she/he order a site license subscription to *On the Horizon*. View each issue of *On the Horizon* as a pump-primer to organizational planning. For example, the chair's cover letter to the first issue should urge planning committee members to consider how the content of particular items

in the newsletter affect the institution and to write down their thoughts (or send them to the group via e-mail); their collective thoughts would be used to begin discussion at the next committee meeting.

Before the meeting, the chair could compose a questionnaire identifying those articles in *On the Horizon* that may affect either the organization as a whole or particular curricular programs. He/she should ask committee members to rank-order the most important ones, and follow this rank order for the discussion agenda.

As the committee becomes accustomed to this process, the chair should request members to send articles, notes, or commentary that they encounter in their reading and at conferences about potential developments that could affect the organization. They should use the structure of the newsletter: send information about signals of change in the STEEP (i.e., *social, technological, economic, environmental,* and *political*) categories, particularly on the local and regional levels (*On the Horizon* tends to focus on the national and international levels). The reason for using this structure is that developments in one sector affect developments in other sectors (i.e., a war in the Middle East affects fuel prices everywhere); therefore, in order to anticipate change, we need to look for developments that may have direct or indirect effects on the organization.

Committee members should examine sources for change in relevant variables (e.g., immigration, price of computers, mood of voters). What change is already taking place? Is there a movement upward or downward? What are the projections? What are the emerging trends (i.e., what combinations of data points—past trends, events, precursors—suggest and support the early stages of a possible trend)? What external events, policies, or regulatory actions would affect or be affected by the projections? They should look for forecasts by experts, and append their own implications section to the emerging issues, critical trends, or potential developments when they send their information items.

The chair should summarize the articles and their implications in the cover letter when sending the next issue of *On the Horizon*, and include a

questionnaire asking each committee member to rank the five most important items submitted by the committee or included in the newsletter.

The agenda for the planning meeting should include the top items. At the meeting, focused around these items, committee members should draw out the implications of the potential developments for ongoing organizational and program planning. They may want more information about a particular trend or potential event. In this case, enlist the aid of a research staffer or librarian (who should be on the planning committee anyway).

Regularly circulating information about potential developments and asking committee members to think of their implications reinforces a future-oriented posture in our colleagues. They will begin to read, hear, and talk about this information not only as something intellectually interesting but as information they can use in practical organizational planning.

Conclusion

The preconference workshop was conducted in a restricted time frame. It was, however, sufficient to give you experience in using several basic approaches to transform information into strategic intelligence for your institution. This experience, in conjunction with the references sited earlier, should help you establish and maintain an environmental scanning capability on your campus.

You have other resources available. One of the major reasons for publishing *On the Horizon* is to bring you and your colleagues the expertise and foresight of an exceptional and diverse editorial board. Our objective is to alert you to potential developments and emerging trends that may affect your organization so that you can plan for the future more effectively.

Horizon List and *Horizon Home Page* allow you to participate in and contribute to an on-going dialogue of signals of change in the external environment and their implications for the future of education. Please subscribe to *Horizon List*, browse *Horizon Home Page*, and enter into these important discussions with colleagues all over the world.

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